

In the Claims:

73. (Currently Amended) A method of impregnating an intraluminal prosthesis with a pharmacological agent, comprising:

immersing an intraluminal prosthesis in a mixture of a carrier fluid and a pharmacological agent, wherein the intraluminal prosthesis comprises non-layered polymeric material;

pressurizing the mixture of carrier fluid and pharmacological agent for a time sufficient to cause the carrier fluid and pharmacological agent to at least partially penetrate the non-layered polymeric material;

removing the pressure over a predetermined period of time and under controlled conditions such that the carrier fluid diffuses out of the non-layered polymeric material and the pharmacological agent becomes elutably trapped within the non-layered polymeric material in a predetermined concentration gradient, wherein the concentration gradient defines an elution profile of the pharmacological agent from the non-layered polymeric material when the intraluminal prosthesis is deployed within a body of a subject.

74. (Previously Presented) The method of Claim 73, wherein the step of removing pressure is carried out under controlled conditions in which at least one parameter selected from the group consisting of temperature, rate of temperature change, pressure, rate of pressure change, carrier fluid quantity, and rate of carrier fluid quantity, is controlled in a predetermined pattern.

75. (Currently Amended) The method of Claim 73, further comprising masking one or more portions of the intraluminal prosthesis with a protective layer of material prior to immersing the intraluminal prosthesis in a mixture of a carrier fluid and a pharmacological agent, wherein the protective layer of material is configured such that the mixture of carrier fluid and pharmacological agent at least partially penetrate only unmasked portions of the non-layered polymeric material during the pressurizing step.

76. (Previously Presented) The method of Claim 73, wherein the carrier fluid is carbon dioxide.

77. (Previously Presented) The method of Claim 73, wherein the carrier fluid is carbon dioxide and wherein the step of pressurizing the mixture of carrier fluid and pharmacological agent is performed using an inert second gas.

78. (Previously Presented) The method of Claim 77, wherein the second gas is selected from the group consisting of helium, nitrogen, and argon.

79. (Previously Presented) The method of Claim 73, wherein the pharmacological agent comprises everolimus.

80. (Previously Presented) The method of Claim 76, wherein the carbon dioxide is present in a supercritical state.

81. (Previously Presented) The method of Claim 80, wherein the carbon dioxide contains one or more of a co-solvent, a surfactant, and a co-surfactant.

82. (Currently Amended) The method of Claim 73, wherein the carrier fluid is configured to alter diffusion coefficients of the non-layered polymeric material.

83. (Previously Presented) The method of Claim 81, wherein the co-solvent is selected from the group consisting of ethanol and methanol.

84. (Previously Presented) The method of Claim 73, wherein the intraluminal prosthesis is a stent.

85. (Currently Amended) The method of Claim 73, wherein the non-layered polymeric material is non-erodible.

86. (Currently Amended) The method of Claim 73, wherein the non-layered polymeric material is a coating on a portion of the intraluminal prosthesis.

87. (Currently Amended) The method of Claim 73, further comprising:
immersing the intraluminal prosthesis in a mixture of a carrier fluid and radiopaque material; and

pressurizing the mixture of carrier fluid and radiopaque material for a time sufficient to cause the carrier fluid and radiopaque material to at least partially penetrate the non-layered polymeric material.

88. (Currently Amended) A method of impregnating an intraluminal prosthesis with a pharmacological agent, comprising:

immersing an intraluminal prosthesis in a mixture of a carrier fluid and a pharmacological agent, wherein the intraluminal prosthesis comprises non-layered polymeric material;

placing the intraluminal prosthesis within a pressure vessel;

pressurizing the interior of the pressure vessel with an inert gas to a predetermined pressure, wherein the inert gas is selected from the group consisting of helium, nitrogen, and argon;

supplying a mixture of a carrier fluid and a pharmacological agent into the pressure vessel;

exposing the non-layered polymeric material and the mixture of carrier fluid and pharmacological agent in the pressure vessel for a time such that the carrier fluid and pharmacological agent at least partially penetrate the non-layered polymeric material; and

releasing the pressure in the pressure vessel over a predetermined period of time and under controlled conditions such that the carrier fluid diffuses out of the non-layered polymeric material and the pharmacological agent becomes elutably trapped within the non-layered polymeric material in a predetermined concentration gradient, wherein the concentration gradient defines an elution profile of the pharmacological agent from the non-

layered polymeric material when the intraluminal prosthesis is deployed within a body of a subject.

89. (Previously Presented) The method of Claim 88, wherein the step of releasing pressure is carried out under controlled conditions in which at least one parameter selected from the group consisting of temperature, rate of temperature change, pressure, rate of pressure change, carrier fluid quantity, and rate of carrier fluid quantity, is controlled in a predetermined pattern.

90. (Currently Amended) The method of Claim 88, further comprising masking one or more portions of the intraluminal prosthesis with a protective layer of material prior to immersing the intraluminal prosthesis in a mixture of a carrier fluid and a pharmacological agent, wherein the protective layer of material is configured such that the mixture of carrier fluid and pharmacological agent at least partially penetrate only unmasked portions of the non-layered polymeric material during the pressurizing step.

91. (Previously Presented) The method of Claim 88, wherein the carrier fluid is carbon dioxide.

92. (Previously Presented) The method of Claim 91, wherein the carbon dioxide is in a supercritical state.

93. (Previously Presented) The method of Claim 91, wherein the carbon dioxide contains one or more of a co-solvent, a surfactant, and a co-surfactant.

94. (Previously Presented) The method of Claim 93, wherein the co-solvent is selected from the group consisting of ethanol and methanol.

95. (Previously Presented) The method of Claim 88, wherein the pharmacological agent is everolimus.

96. (Previously Presented) The method of Claim 88, wherein the intraluminal prosthesis is a stent.

97. (Currently Amended) The method of Claim 88, wherein the non-layered polymeric material is non-erodible.

98. (Currently Amended) The method of Claim 88, wherein the non-layered polymeric material is a coating on a portion of the intraluminal prosthesis.

99. (Currently Amended) A method of impregnating an intraluminal prosthesis with a pharmacological agent, comprising:

masking portions of an intraluminal prosthesis with a protective layer of material such that the intraluminal prosthesis has first and second unmasked portions, wherein the intraluminal prosthesis comprises non-layered polymeric material;

immersing the intraluminal prosthesis in a mixture of a carrier fluid and first and second pharmacological agents;

pressurizing the mixture of carrier fluid and pharmacological agents for a time sufficient to cause the carrier fluid and the first pharmacological agent to at least partially penetrate the first unmasked portion and to cause the carrier fluid and the second pharmacological agent to at least partially penetrate the second unmasked portion; and

removing the pressure over a predetermined period of time and under controlled conditions such that the carrier fluid diffuses out of the non-layered polymeric material and such that an amount of the first pharmacological agent remains elutably trapped within the first unmasked portion in a predetermined concentration gradient and an amount of the second pharmacological agent remains elutably trapped within the second unmasked portion in a predetermined concentration gradient, wherein each concentration gradient defines an elution profile of a respective pharmacological agent from the non-layered polymeric material when the intraluminal prosthesis is deployed within a body of a subject.

100. (Previously Presented) The method of Claim 99, wherein the step of removing pressure is carried out under controlled conditions in which at least one parameter selected from the group consisting of temperature, rate of temperature change, pressure, rate of pressure change, carrier fluid quantity, and rate of carrier fluid quantity, is controlled in a predetermined pattern.

101. (Previously Presented) The method of Claim 99, wherein the carrier fluid is carbon dioxide.

102. (Previously Presented) The method of Claim 99, wherein the carrier fluid is carbon dioxide and wherein the step of pressurizing the mixture of carrier fluid and pharmacological agent is performed using an inert second gas.

103. (Previously Presented) The method of Claim 102, wherein the second gas is selected from the group consisting of helium, nitrogen, and argon.

104. (Previously Presented) The method of Claim 101, wherein the carbon dioxide is present in a supercritical state.